

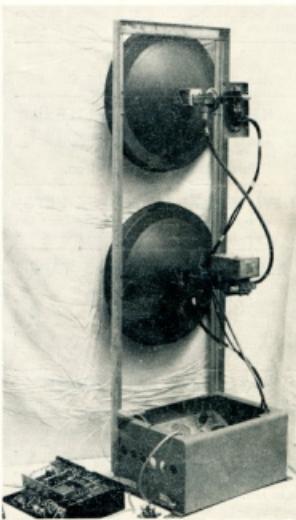
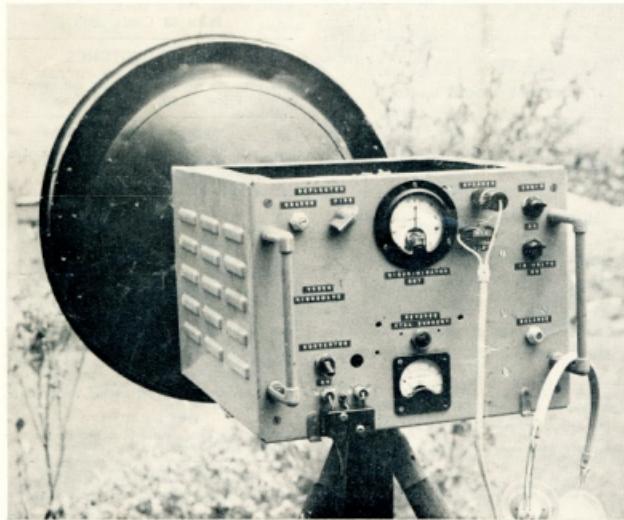
amateur radio

Vol. 40, No. 2

FEBRUARY, 1972

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amateur radio

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COVER STORY

Equipment used for 10 GHz Australian record. At left, VK5ZMW's 10.01 GHz. Station; at right, VK5CU/P's Tx and Rx Parabolas for 10.04 GHz. See details in VHF Notes on page 13.

CHANGES IN FEDERAL STRUCTURE

On 17th January, 1972, the Wireless Institute of Australia was incorporated as a Company limited by guarantee.

It is now nearly ten years since the changes proposed in the Federal structure that have lead to the incorporation of the Federal body were first advanced to the Federal Council by the Victorian Division. In fact the need for change has resulted in change taking place before the structural changes could be implemented. For example, when the Victorian Division put forward its original proposals it foresaw that at some time in the future the Federal body could wish, one day, to employ a Secretary or Manager. The structure proposed was designed to allow this to occur. In fact a Manager has now been employed for nearly a year, though interim arrangements have had to be made with the Victorian Division pending finalisation of the incorporation of the Federal body.

We can, as an organisation take, I think, no pride in the fact that we took so long to take these steps that now seem to be so obvious.

In effect, the Federal body now has a completely new constitution in the form of its Articles of Association. It is, I think, appropriate to point to some of the changes that have been made and the consequences that flow from them. These points may be summarised as follows:

1. WHY A COMPANY?

The Wireless Institute of Australia is incorporated in Victoria as a Company limited by guarantee and it holds a certificate of the Attorney-General enabling it to dispense with the word "limited" in its title and by virtue of that certificate certain requirements of the Companies Act in relation to the lodgment of documents are not applicable to it. The Company has six "members", namely each of the Divisions. A company is a separate legal entity from the individuals that comprise it. This enables it to enter into contracts and undertake liabilities which ordinarily raise no question of the personal liability of either its members or officers.

2. "AMATEUR RADIO"

This issue of "Amateur Radio" will be the last issue published by the Victorian Division. One of the important changes proposed by the Victorian Division when it advanced its original proposals was that this magazine and the other publications of the Institute should be published by all Divisions. We are a large national body. This magazine is sent to all members of all Divisions. It is only reasonable that all Divisions should have an equal say in its content and production. Therefore, the Federal Council appoints an Editor and a Publications Committee. The Editor is a member of the Federal Executive and is Chairman of the Publications Committee. He is, there-

fore, in a position to see the day to day problems dealt with by the Federal Executive. He is in a position to consult with the Federal Executive as and when it becomes necessary. He will, of course, have the assistance of the Manager who will undertake a large part of the work associated with the magazine.

3. THE FEDERAL COUNCIL

Each Division will continue to be represented by a Federal Councillor. The Institute meeting in general meeting is called the Federal Council. The Articles envisage the appointment of an alternate Councillor to represent a Division at any particular or special meeting of the Federal Council. The annual general meeting, incidentally, is called the Federal Convention. As you can see, most of the fundamental concepts of our Federal body are preserved in the new form. One important difference is that the Federal Councillors are required to have the written authority of their Divisions to vote on behalf of their Division and upon their vote being cast their Division is thereupon bound by it.

In the past the decisions have been subject to ratification by the Divisions—generally speaking decisions of the Federal Council made at Easter at the Federal Convention have not been ratified by all the Divisions until August or even September. However, the new Articles do provide that a Federal Councillor may withhold his vote and exercise it within 30 days of the end of the Convention if he so wishes. This provision is designed to deal with any matter in respect of which the Federal Councillor feels that it is essential that he obtains guidance from his Division. If he does not exercise his vote within 30 days he is deemed to abstain.

4. THE FEDERAL EXECUTIVE

The Federal Executive are appointed at each Federal Convention. Under the old constitution the Federal Executive are nominated by one Division which is nominated as Headquarters Division and the nomination of the individuals is subject to ratification by the Divisions. This is all done prior to the Convention by mail.

The new Articles provide that the members of the Executive are appointed by the Federal Council at the Federal Convention. The new "constitution" has no concept of a Headquarters Division. The only qualification to be a member of the Federal Executive is that the individual is a member of a Division. As a matter of practical reality the Federal Council will, no doubt, at least in the foreseeable future, continue to appoint the members of the Federal Executive from one Division as the costs of bringing a member of the Federal Executive to regular meetings from other States would be certainly more than we can afford at this time. Indeed, the new

Articles go so far as to permit the Federal Council to appoint one of their members as President.

5. THE FEDERAL SECRETARY

I have already indicated how the Federal Executive are appointed and have also referred to the fact that the Editor of "Amateur Radio" is a member of the Federal Executive. Including the President and the Editor of "Amateur Radio" there are six members of the Federal Executive. In addition, the Articles provide that a Secretary shall be appointed by the Executive. The Secretary has no vote as a member of the Executive because it was envisaged (as will in fact be the case) that the Secretary will be a paid employee. The Attorney-General, in granting his certificate, requires that no paid employee can be appointed as a Director (in formal terms the members of the Federal Executive are the Directors of the new Company).

6. PROCEDURE

Generally speaking the procedural steps that will be utilised within the new framework parallel the procedural steps in the old structure. One important difference is that notice of motions must be given 30 days prior to a Federal Convention. A motion can still be passed at a Federal Convention even if notice has not been given. The Chairman has a discretion to permit such business to be brought forward but if he exercises his discretion to allow the matter to be considered, it requires three-quarters majority to be passed.

These, then, are some of the more important changes that take place with incorporation of the Wireless Institute of Australia. Many of the changes that have been incorporated in the Federal structure are designed primarily to facilitate the handling of its day to day affairs. The new structure does, however, permit the transfer of the publications to the Federal body so that they do become truly national. The structure will also facilitate many of the administrative changes that have already been implemented, such as the centralisation of subscription records and the E.D.P. processing of those records.

Ordinarily I am hesitant to pay tribute to the Victorian Division because I am mindful that, as a member of that Division, such comments could be misconstrued. However, on this occasion, I believe that I would have the support of all the Federal Councillors if I were to point out that these changes, which can only strengthen the Federal body, are due in no small measure to the foresight and truly national outlook of the members and the Council of the Victorian Division. We now have a far more effective structure thanks to that foresight. It is up to us to use that structure effectively.

—Michael J. Owen, VK3KJ,
Federal President, W.I.A.

A Tracking FM-AM Demodulator using an IC

R. F. DANNECKER,* VK4ZFD

This is the second of two articles on the use of the phase-lock loop as an FM/AM demodulator.

The circuit to be described uses the Signetics Corp. NE561B IC and is based on Signetics' application notes. Besides providing demodulation of the f.m. component of a signal and perfect a.f.c., tracking of that signal, provision is also made for the synchronous demodulation of the a.m. component of the signal.

A block diagram of the NE561B is shown in Fig. 1; the portion enclosed in the dotted outline is in addition to the basic phase-lock loop already described. The a.m. input is taken before any limiter in the main receiver and its phase is shifted 90° with respect to the f.m./r.f. input. This is necessary to have the correct phase relationship between the a.m. signal and the v.c.o. input to the multiplier.

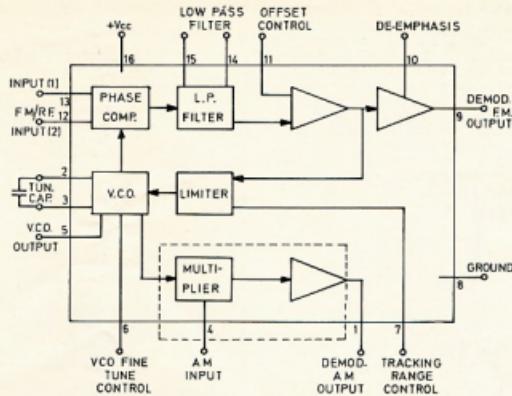
Shown in Fig. 2 is the basic demodulator. With reference to Fig. 1 we have the limited f.m./r.f. input applied between pins 12 and 13, phase shifted a.m. input applied at pin 4, the v.c.o. frequency determining capacitor (C_o) connected between pins 2 and 3, the external components of the low pass filter between pins 14 and 15, and the f.m. de-emphasis capacitor (C_d) connected between pin 10 and earth. The muting function is accomplished by use of the output of the a.m. detector to open an audio gate in the presence of signal input.

The circuit diagram for the complete demodulator is shown in Fig. 3. Circuit functions can be most readily seen with reference to Fig. 2. The design centre frequency is 2 MHz, but the NE561B will function from less than 1 Hz. to more than 15 MHz. Input signal is amplified by the 2N5486 JFET which is wired as a simple tuned amplifier at the required i.f. Three AY1101 transistors are used in the limiter, while the 90° phase shift is provided by an adjustable RC phase shift network.

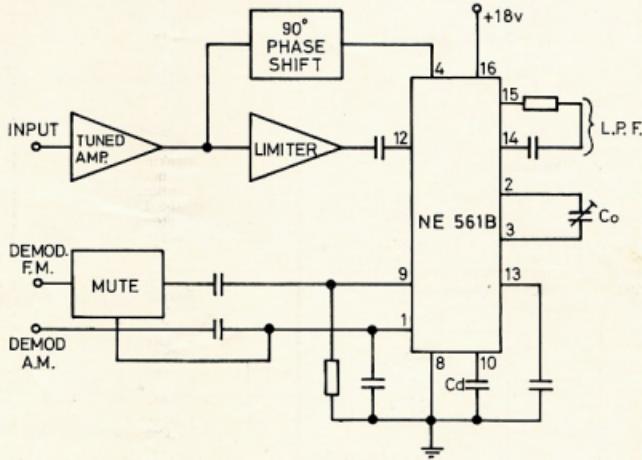
Muting of the f.m. output is performed by the use of a suitably biased diode as a series gate. When no signal is present, the diode is reverse biased by the 2 x 2N3638 emitter coupled pair and when signal is applied the output from the synchronous a.m. detector causes the emitter coupled pair to forward bias the diode and allow signal through to the f.m. output.

The AY1101 transistor is used to set bias levels relative to those of the IC. A.m. output is taken from pin 1 via a JFET source follower; an MPF102 would be suitable for this function. The a.m. detector can also be used to give an indication of signal strength. A suitable circuit is shown in Fig. 4.

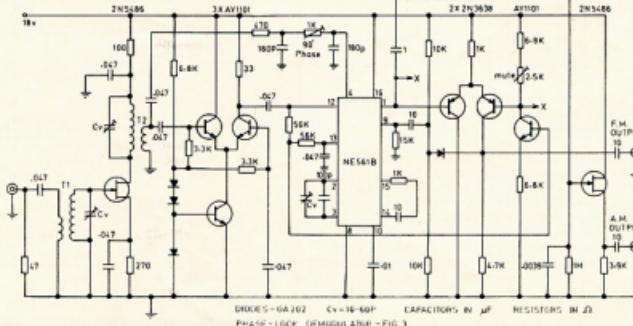
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BLOCK DIAGRAM OF NE561B - FIG. 1.

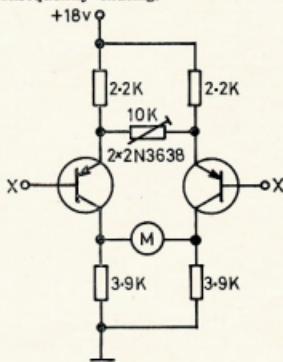


BASIC DEMODULATOR.—FIG. 2.



PHASE-LOCK DEMODULATOR — FIG. 3.

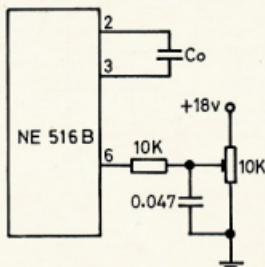
If operation at some i.f. other than 2 MHz. is desired, (e.g. 455 KHz.) it would be necessary to change the resonant circuit in the JFET amplifier, change the v.c.o. timing capacitor C_0 (e.g. 600-800 pF.) and the 90° phase shift network (e.g. 2.2K, 5K pot., 2 x 150 pF.). If a frequency less than 500 KHz. is required, consideration could be given to the NE565 which will function as an f.m./p.m. detector but does not provide for a.m. detection and consequently muting.



SIGNAL LEVEL INDICATOR

FIG. 4.

An alternate method of fine tuning the v.c.o. is shown in Fig. 5 in which current is injected into pin 6 of the IC. A change of +12% is possible for an input current of 1 mA. This method of fine tuning will also affect the tracking range of the demodulator.



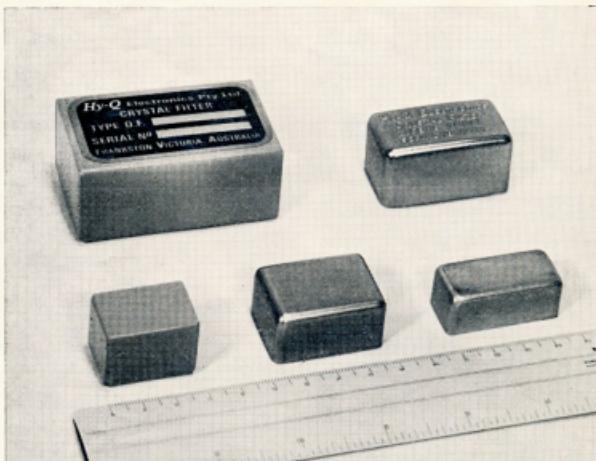
ALTERNATIVE VCO FINE TUNING — FIG. 5.

This completes the description of the phase-lock demodulator.

Such a unit as has been described in this article is in use in a satellite tracking receiver used for monitoring navigational and weather satellites. The principal use of the phase-lock type of detector for this application is the automatic tracking of the Doppler shift of the signal which is as much as ± 4 KHz. at the frequencies used.

(Continued on Page 7)

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1—Gee-Jay spring ES35, 1" x 7/32" close wound tension spring.

No trouble was experienced in obtaining these from a local auto-electrical repair firm. The finished key used a mixture of all three of the above contacts just to determine the availability of these contact sets.

It is possible, also, to use the screwed contact made for A Model Fords, but these have a different thread so would require a different drill and taps to those in the parts list.

The local Ford dealer could have supplied some A Model Ford contacts from stock. Also for American readers, Sears Rosedale catalogue quotes them as part number 28H8290.

6—5/32" hollow pointed grub-screws.

2—terminals.

4—solder lugs.

2—5/32" lock washers.

1—5/32" hex. brass nut.

4—1" long x 5/32" round-head Whit. brass screws.

This material can be purchased from Radio Parts Pty. Ltd., although it may be necessary to purchase in gross lots, however the unused material will be useful in later projects.

1—piece hardwood 6" x 3" x 1" nominal.

To be cut square. Top and bottom to be finished flat. Finished size may be slightly smaller than the above due to machining.

This was obtained without any difficulty from a local timber yard.

1—piece tinned copper wire, about 1 ft. x 22 s.w.g.

1—1" nail.

CONSTRUCTIONAL DETAILS

The drawings give details and the following notes are for guidance.

The spring is cut in half and a loop formed at the cut end of one piece. One end of the spring goes through a 1/16" hole drilled cross-wise through the 1" x 5/32" tension screw. The other end of the spring goes through a 17/64" hole bored through the wooden base and is held in place with a cut-off nail which lies in a groove scored in the base with a pocket knife.

Remove the filigree from the knob by breaking it away.

The shaft hole in the lever and shaft holes in the spacers are 1/4" diameter, but the shaft holes in the pillars are 17/64". The silver steel shaft should be 1/4" diameter and may have to be forced into the lever and spacers if they have been accurately drilled to 1/4".

The 17/64" holes in the pillars are a bit big but a drill in between 17/64" and 1" was not available and it was not desired to go to the expense of reamers or scrapers. This is the reason for the two locating grub-screws in each pillar. The threads for these should be cut with the taper tap so that the grub-screws will be tight.

The different makes of ignition contacts may vary in length of thread and may have to be cut off, particularly the rear one for the lever.

A number of 1/4" holes are counter-bored on the underneath side of the lever to reduce its mass, otherwise considerable exertion is needed when sending, to raise the lever, because of gravity, for spaces. If the tension spring is too tight then too much work is needed in sending.

Even as it is, the key is a bit "heavy," but has been operated at 30 w.p.m.

It can be made "lighter" if the lever is made from a piece of brass 5/16" wide x 7/16" deep and altering the length of the spacers. The rest of the brass work remains the same.

It is essential that the shaft holes all be drilled accurately or the shaft will bind in the pillars. This drilling may take some practice and is the reason that a piece of brass 18" long was purchased. Also, the ends of the spacers and the pillars must be filed flat.

If a drill press and lathe are available then it will be easier to make the key, however the one shown was made using hand tools only.

The cost can be reduced by using iron or brass screws for the two front

contacts, in which case the key will probably have a "soft" feel.

The cost of this project, apart from tools, was \$10, most of it being for the contacts as it was necessary to buy a "pair in a set" and discard the riveted contact as no way could be worked out to use it.

So here is a key that won't blow up like some other "home-brew".

WIRELESS INSTITUTE OF AUST.

VICTORIAN DIVISION

A.O.C.P. CLASSES

Classes in theory and Morse will commence respectively on Tuesday, 15th February, 1972, and Thursday, 17th February, 1972, from 8 p.m. to 10 p.m. Subject to demand, a Saturday morning class in theory is also proposed.

Persons desirous of being enrolled should communicate with the Secretary, W.I.A., Vic. Division, P.O. Box 36, East Melbourne, Vic., 3002. Phone 41-3535 10 a.m. to 3 p.m.

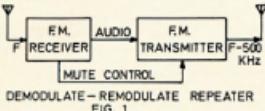


Barry VK2FE recently had the pleasure of receiving a painting, especially painted for him by talented Wollongong artist Kevin Pomfret. The painting, a semi-abstract work, has Amateur Radio as the theme with personal touches of Barry's station throughout. Of significance is the "shadow" of the signpost. This would be something of a rarity in Amateur Radio to have a personalised painting with one's own station as the theme.

ON F.M. REPEATERS

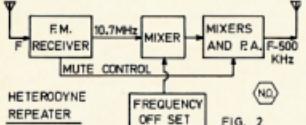
The two basic forms of f.m. repeaters in use today are shown in block diagram form in Figs. 1 and 2.

The system in Fig. 1 has the disadvantage that the signal must be demodulated with consequent distortion and receiver threshold problems. However, it does have the advantage that the audio can be processed (filtered and compressed) before re-transmission.



The system in Fig. 2 reduces distortion and threshold problems, but no simple way of signal processing is available before re-transmission. Thus the incoming signal must be degraded by the repeater before being re-radiated.

A somewhat superior version of the heterodyne repeater is shown in Fig. 3. Though it is not an original idea, the writer advocates it because it offers significant improvement over the systems used at present in Amateur repeaters/translators.



Due to the action of the phase-lock loop (refer to articles in "A.R." Jan., 1972, and this issue) we know that $F_r = F_o - F_n$, therefore $F_o = F_r + F_n$ and we obtain the offset in frequency. As outlined in a previous article on phase-lock loops, the output (F_o) of the loop is a cleaned up version of the input since the loop is effective a filter which rejects noise. Thus the incoming f.m. signal is not only translated in frequency, but the undesired noise on it is greatly reduced before it is re-transmitted.

The only additional components required above those in a heterodyne re-

peater are the phase-lock loop (one integrated circuit) and the band-pass filter (tuned circuit). This is not a very large price to pay for the substantial improvement gained.

Improved mute control can also be achieved by using a phase-lock loop IC containing a coherent amplitude detector which is used to operate the mute.

The author would be interested to hear from any repeater group intending to build a phase-lock repeater who require a design.

—R. F. Dannecker, VK4ZFD.

Demodulator using an IC

(Continued from Page 4)

When the proposed Amateur satellite with the active repeater on 432 MHz becomes operational, Doppler shift of at least ± 10 kHz will be experienced on the received signals from the satellite. It will therefore be necessary for stations receiving the signals to provide some form of tracking of the signal frequency. If such a tracking filter/demodulator as the one described in this article is used, the receiver bandwidth must be the signal bandwidth plus 20 kHz, to allow for Doppler shift.

A Service to Members
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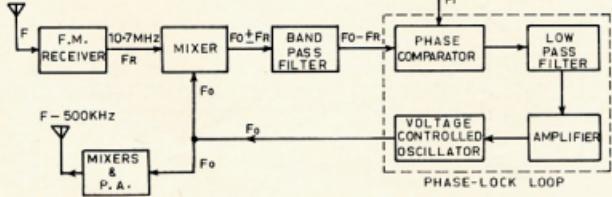
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FIG. 3 PHASE-LOCK REPEATER



NEW FIVE-MINUTE ADHESIVE

A new rapid setting epoxy adhesive, with a bond strength of 2,000 lb. per square inch, has been developed by Davis-Fuller, Ltd. The adhesive, known as Resiweld Five, sets in only five minutes, can be sown or planed in 20 minutes and resists its full bonding strength in only 30 minutes.

Combining the high bonding strength of epoxy with the quick setting characteristics of contact adhesives, Resiweld Five was formulated as an ideal adhesive for general repairs, bonding fine breaks and all types of hobby work.

A thin, flowable liquid in texture, Resiweld Five is sold for 50c per tube and is packaged as two tubes which are mixed to produce the adhesive. Curing begins immediately on contact after mixing.

It may be used on timber, glass, stone, fibre-glass, steel, aluminium, sheet metal and hard plastics. Davis-Fuller expects Resiweld Five to find wide acceptance for such tasks as radio and electrical construction and repairs, lapidary work, jewellery, glassware and such craft work as model aeroplane building.

Resiweld Five has a tensile strength of 1,000 lb. per square inch after 30 minutes and full tensile strength of 2,000 lb. p.s.i. after 30 minutes.

Davis-Fuller Adhesives is a division of Davis Consolidated Industries Ltd.

COOK BI-CENTENARY AWARD

The following additional stations have qualified for the Award:

Cert. No.	Call No.	Cert. No.	Call No.	Cert. No.	Call No.
1436	DLEJ1	1441	PAGVB	1444	WBSSMG
1439	AX2BNK	1442	AX5ST	1445	SM3AWO
1440	DK1KL	1443	HK4DF		

V.H.F./U.H.F. SECTION

Cert. No.	Call No.
31	AXSLP
32	AX3YET

W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. The total number shown is determined by the first number. The first number represents the participant's total countries less any deleted countries for the year. The second number shown represents the total D.X.C.C. credits given, including deleted countries. Where totals are the same, listings will be alphabetical by call sign.

Credits for new members and those whose totals have been amended are also shown.

PHONE

Cert. No.	Call No.	Total
129	VK3CR	101/101
123	VK5SW	100/100

Amendments:

VK2SG	262/264	VK3AMK	238/238
VK2AAH	243/253		

C.W.

VK3OL	305/329	VK3ARX	271/278
VK3AJH	300/315	VK3XB	270/284
VK4FJ	289/315	VK4GRU	266/259
VK2APK	286/294	VK3YD	263/282
VK3YL	286/303	VK4TY	295/272
VK3NC	273/309	VK3TLE	276/279

Amendments:

VKLFJ	195/204	VK2AAH	140/149
VK2SG	142/146		

OPEN

VK6ER	317/343	VK6MK	303/324
VK4SD	315/330	VK2EJO	301/325
VK4FJ	308/320	VK3ARX	298/298
VK4KS	308/327	VK2SCB	289/304
VK4TY	306/321	VK4TY	288/298
VK2APK	303/315	VK4PJ	297/323

Amendments:

VK2AAH	255/269	VK3QV	130/139
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FEDERAL REPEATER SECRETARIAT

Last year the F.R.S. was asked to investigate the clash of frequencies between the output of Channel 4 Repeaters and the proposed channels in the Project Australis Oscar 6 Satellite of 145.0 MHz. Although that problem has been solved, it will, I must emphasize, be temporary because there will be future satellite programmes.

To understand the problem it is necessary to refer back to the formation of the 2 mX band f.m. nets in Australia. The availability of surplus f.m. equipment in the early 1960s prompted their use on the Amateur bands. The intended frequency was 145.000 MHz, but, as the test showed, it is a sine that is suitable only in the evolution of Ch. A. In time the three simplex Channels A, B and C developed. In VK2 another error resulted in 145.1 for Ch. C. About 1966/67 experimental repeaters (Orange 145.055 and 145.1) and repeaters (Melbourne 21 with 145.76 in 147.8 out) existed. When the right to establish repeaters was secured in July/August 1968 it became obvious that a standard was required, hence the Wadsworth Conference.

Because the basic frequency was set by the existing simplex operations a decision was required on the number of channels and the input-output frequencies. It was decided at the Conference that since the bulk of the equipment coming into service was built to a commercial specification the repeater system should be made to fit that specification. It was agreed to use four channels for repeaters with frequencies on the 10 mHz points on either side of the existing simplex system for compatibility. This meant that the frequency range

of tx tuning would be from Ch. A to Ch. 4, approximately 559 kHz. Likewise, the rx range extended from Ch. 1 to Ch. C a similar 559 kHz spread. It will be noticed that 145.6 MHz is 800 kHz, the tx and rx each use the overlapping 550 kHz.

Most equipment operates satisfactorily without the need to re-tune from one channel to another. This was the specification reached. The greater the spacing between the input and the output frequencies at the repeater site, the less will be the rx desensitisation, but the practical limit is reached when the users' unit performances fall away. If there had been no simplex channels to be fitted into the scheme a separation of 2 or 3 MHz could have been used.

In order that the maximum benefit could be obtained from the f.m. channels on a national basis it was decided to use three channels for the three simplex cases and two simplex and two for repeaters. The channels chosen were Ch. B, Ch. 1 and Ch. 4. Development continued without major problems until last year when the Ch. C output frequency of 145.9 MHz conflicted with the "announced" satellite channels. As stated, although this is now clear for this satellite the problem remains for the future.

In the 2 mX band everything below 145.000 MHz is in the International segment of the band. This means that if any future International system makes use of a frequency in use by an Australian system, then, Australia has an obligation to move. An ideal for Australia—

but not necessarily the most practical solution—would be to shift all our channels to spots above 148.000 MHz (i.e. Ch. 1 and Ch. 4 outputs plus Ch. A and Ch. B). Against this there are basically the cost of replacement crystals and the ability to establish new national standards. It is felt that the moment Ch. B is the prime channel in any part of the country. The adoption of this ideal would therefore leave the International segment clear of Australian fixed station operations. However, this has received mixed reactions. VK2 and VK3 appear to oppose it, but some support is forthcoming from VK5 and VK7.

Since the rest of the world possesses various systems within the segment 145.000 to 146.000 MHz it is important that International agreement should be reached in this region of the frequency spectrum. The available information indicates that the following frequencies are in use or allocated:

Region 1

Europe & G: majority of beacons 145.95-146.00; DL repeater outputs: 145.7, 145.75, 145.8, 145.85;

A.O.B. satellite channel: 145.925-145.975;

SM & OZ repeater outputs: 145.65, 145.75, 145.8, 145.85.

Region 2

No W repeaters;

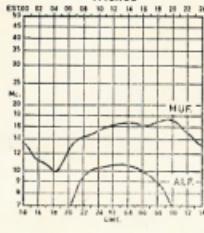
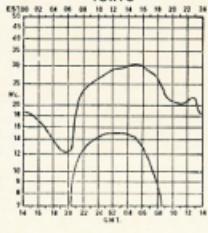
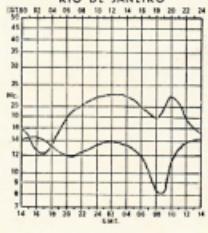
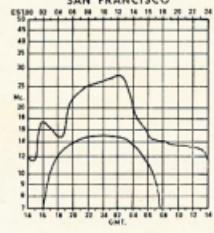
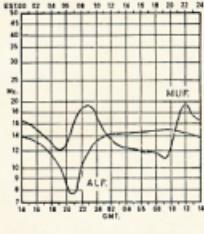
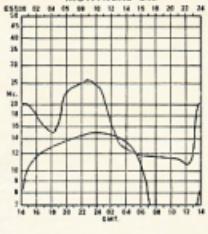
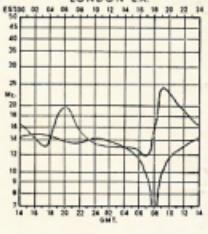
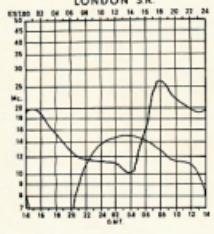
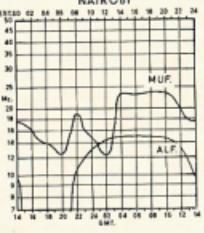
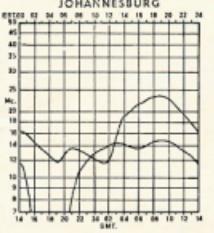
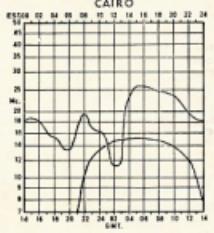
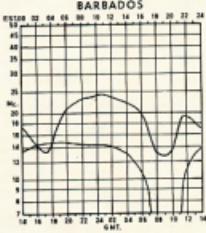
Amat input: 145.9-146.0;

Some early Oscar satellites used 145.8.

(Continued on Page 11)

PREDICTION CHARTS FOR FEBRUARY 1972

(Prediction Charts by courtesy of Ionospheric Prediction Service)



Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the Publishers.

NOVICE LICENSING— SUPPLEMENTARY REPORT

Editor "A.R." Dear Sir,

Admittedly, in the past, the question of so-called Novice class licences has not impinged on my normal "live and let live" (apathetic?) nature, but after reading the Supplementary Report by W.L.A. (Novice Licensing Investigation Committee ("A.R."), Jan. 1972), I was quite literally stunned by the implications of the proposals as outlined.

At this point I would like to make clear that I am opposed to Novice licensing whether called by that name or any other. However, opinion is not uniform, it is apparent from the proposals regarding the classes of licence will be submitted to the relevant authority, and it is to some of the proposals as recommended to which I take exception.

Section (e) states that there should be no limitation on tenure for Novice licences. As the standard required regarding technical proficiency is lower than that required for current licences, it is obvious that any Novice should be expected, within a given time, to up-grade to the general standard. Twelve months, or at the most two years, should be more than adequate.

A portion of Section (g) recommends Mobile operation (as a passenger). No comment—except to suggest that there must be some incredibly naive people who could imagine adherence to a regulation of this nature.

Section (i) at least gives my somewhat detailed go-ahead, suspending as it does that techniques involved on v.h.f. and u.h.f., to which I am relegated, are more complex than those employed by my h.f. brethren. My thoughts are that Novice licensees are to be limited on h.f. these v.h.f. and u.h.f. should suffer equally.

The third comment relating to Section (j) is undoubtedly the gem of the whole collection, implying as it does that wherever else the Novice is allowed to go, he must be kept at a safe distance from the hamming grounds of the DX fields on 14 MHz. My thoughts on this are the same as for the preceding Section.

Referring to "Recommendations for Action", Section (b), proposes full membership of the Novice class licence group. This move should be resisted by all members as the voting power of this group would be out of proportion, considering the as yet unassessed worth of the scheme. Further, the voting power of the novice licensee would naturally be predisposed toward any person or group championing their cause.

This letter was triggered off by a somewhat lengthy discussion this morning (Sunday, 9th January) on 32MHz. Many of the members involved, quite a large group of Amateurs holding both Full and Limited licences, and although I make it clear that all views expressed above are my own, the opinions of the other operators were worthy of comment. If my memory serves me correctly, one member was for the scheme, with many reservations, whilst all other members of the group were against the proposals as they stood, or were against the principle of a Novice licence in general.

One operator suggested that the scheme would create a "ghetto", a view to which I am inclined to subscribe.

I added my voice to the plaint that Novices would enjoy greater privileges than the present Limited licensee, and it was suggested that the Novice should be permitted to practice c.w. on air using m.e.w. crystal controlled, within their present permitted bands, would be of far more value in raising standards than jamming full the bands regarding.

The logical extensions of this idea would be to permit the present Limited licensee to pass a 5 w.p.m. c.w. test which would then allow him to use both phone and c.w. on his present allocations, plus the 10 metre band.

To conclude, I feel that any degradation of the present examination would be a retrograde step; rather more time and effort should be expended on education programmes to assist prospective candidates in raising their degree of competence to the required level.

—Alex H. McKibbin, VK3YEO.

Editor "A.R." Dear Sir,

I have been following arguments on Novice licensing, and was pleased to see the matter being thrashed out but I am dismayed at the final conclusion of the committee published Jan. 1972 ("A.R."). I am convinced that to any reduction in the standard of the exam as it stands, the issuing of a certificate and a permanent licence on the substandard exam.

A certificate represents a degree of proficiency—not the lack of it. The standard of the exam is too stringent at it is, in my opinion. A person can pass a 10 w.p.m. test and then completely forget it some short time later. What is the use of an exam in Morse code that does not determine whether the candidate can actually read it? It is the Morse code in the Wireless Telegraphy Act in accordance with the International Regulations that any person operating h.f. equipment must be able to read Morse code. Therefore anyone who completely forgets how to read an H.F. operator. The test should surely be at such a speed that it will reasonably ensure that the candidate can read Morse code and will not forget it in a short time. The foregoing was just to track to illustrate that the exam is now low enough in standard as it is, now back to point.

I advocate that the Novice licence should be issued "as is" and the "no certificate" should be issued "don't". "Oh that again," before you read the rest. The main purpose of the "restricted licence" as advocated by the committee would appear to be to provide a means of entry into the hobby. Many (if not a committee) do not consider that there will be a permanent group of restricted licensees or if there is they will not present a problem. I disagree on this point.

What sort of people are going to obtain lower class licences and what purpose are they going to serve? One group who, due to lack of experience or ability cannot pass the higher grade of licence in theory, Morse or both, will think themselves fit members of the restricted licence. The main part will be those who have some interest in the hobby but as yet have not yet gained sufficient interest to study for a full licence. Having obtained a lower class licence people in this group will either lose interest and go out of existence or gain interest and obtain an A.O.C.P. or A.O.L.C.P.

In the proposal of the committee the licence will be permanent—the key to retaining the operator's interest in Morse code and the fact that he can use c.w. only. There is no other reason why he should not have phone privileges as well. In fact if a large group of these operators do retain their licences, and also they will probably be given full membership in the institute, they will form a disgruntled pressure group. After all, why shouldn't they use phone: Morse code is not the most important thing in the world. Give them phone and they will find Morse code irrelevant to the use of the whole thing. There will also be some who will forget their code and cease to operate, retaining their licence for prestige reasons only—a licence deserving no prestige.

The main bone of contention is a limited period licence, and when the licence expires and the operator is still interested, he will become a pirate. Why this objection is raised when the solution is so simple I don't know—allow him to sit for the licence again.

The original proposal put forward in 1952 was that c.w. be used in part of 16, 18, 20 and 22 MHz, and c.w. in part of 144 MHz with a limited period licence, 10 watts, crystal control, etc. What is wrong with that?

Consider the persons who may obtain such a licence. A large proportion will lose interest in the end of the period, when their licence will lapse. This could have prevented them becoming pirates for their period of interest. There should be a ready market for their old gear by the new Novices coming on. Some may just lose interest in c.w. and buy a 2 phone only, in which case they will obtain Limited licences. Others will, after a period of practice, obtain full licences. What about those who do not renew their limited licence? They simply remain resolute for the Novice exam. This will ensure that they don't forget their Morse code and that they don't retain their licence for the sake of keeping it.

I advocate among other things:

1. That the period of the licence should be two years.
2. That the certificate be issued—the licence be issued as the exam results only (some statement as to the standard passed could be printed on the licence).
3. That since the licence is only temporary, they should associate members of the Institute only.

—J. A. Adecock, VK3ACA.

Editor "A.R." Dear Sir,

Could I add a thought to the accumulated evidence concerning Novice Licences?

The idea is a simple exam, not involving a Morse code test. Operation on Amateur segments of 27 MHz band, with no limit to one or perhaps several watts. Of course this would be in effect creating a sort of Citizens Band, with some favorable differences. The operators would be paying a licence into much needed government funds and using the call sign. Note: It is alleged many unlicensed operators are using 27.240 MHz, and if that is correct this position would be largely rectified.

The W.L.A. should gain many more members who are more mobile, and have time for Z calls, and many, later to A and B calls.

All the present suggestions I have heard and read about for Novice licences seem to call for a Morse test plus theory and regulation exams. These tests together would be almost equivalent to the requirements for a Z call which does not require a Morse test.

Morse code seems to bluff many potential examinees, and it should and should not be a deterrent anyway, but it does.

I personally know a large number of people aged from 16 to 60 years who would very much like to enter the ranks of Amateur Radio. Most of these younger aspirants and others who for the last have insufficient time to spare think what appears to them (important point that) a difficult subject. Electronics seem so mysterious and complicated before you really start them.

Older worthy members of the community feel the days of studying seemingly difficult subjects are just beyond them, especially in rural areas where personal attendance at W.L.A. classes is not possible.

Many keen aspirants have tried the exam, sometimes two or three times, but they just cannot quite pass the present standards.

Give all these potential Amateurs an easier test, and they would succeed, and probably certain most of them would get the confidence and practical knowledge to upgrade their qualifications.

Concluding, I claim considerable importance should be attached to encouraging and helping youths with worthwhile hobbies, as a distinct community obligation by more senior citizens. Amateur Radio is one of the finest, as we all know.

—K. V. Scott, VK3SES.

[International Radio Regulations require Morse Code proficiency for operators of Amateur Stations on the 27 MHz band—see page 32 of the Handbook.—Ed.]

REPEATER FREQUENCIES AND AUSTRALIS OSCAR "B"

Editor "A.R." Dear Sir,

The Geelong Amateur Radio Transistor Group noted with interest the suggestion in the W.H.P. Notes in Dec. "A.R." that repeater frequencies may be changed to avoid a clash in frequencies with the Australis Oscar "B". We fully appreciate that the choice of frequencies was determined by international as well as local considerations, but we believe that the choice of an up-link frequency for the satellite of 145.9 MHz is not in the best interests of the Australian service.

The problem arises because the satellite up-link frequency of 145.9 MHz is also the output frequency for repeaters on Channel 4. The suggestion that Channel 4 repeaters be moved off during the Australis period (approximately every two hours) is impractical and contrary to the whole concept of a service repeater. It is unlikely that repeaters will get into the satellite; trouble is more likely with Amateurs getting into the satellite being heard on carphones tuned to the repeater.

The suggested alternative is to shift the Channel 4 output frequency. This means at least, perhaps more, new crystals for every Amateur who uses a repeater on Channel 4 or Channel 1 since Channel 1 will also have to shift for conformity. Taken over the whole of Australia, the value of crystals thus rendered useless would be considerable. And the cost of a replacement system uncertain at this time. If, as has been suggested, the receive frequencies are shifted 1 MHz up (Ch. 1 to 146.6, Ch. 4 to 146.9) the performance of most carphones receiving the fail on before those figures.

The repeater frequencies were fixed at the Technical Conference at Wodonga in September 1966. These frequencies were fixed as permanent national frequencies, and the decisions of the meeting were published in "A.R.". Licences have been obtained and a good deal of money invested on the basis that these frequencies would remain as fixed. Now, decisions seriously prejudicing the use of these frequencies have been made without publicity or opportunity for adequate discussion, and the

(Continued on Page 11)

Amsat 1971 Annual Report

The Radio Amateur Satellite Corporation (AMSAT) was formed in 1969 to provide Amateur satellite and space experiments for the Amateur Service. Membership currently numbers over 400, including 40 member societies, and is worldwide with Amateurs from some thirty countries represented.

AMSMAT PROJECTS TO DATE

Amsat-Aircraft Flight Tests—In connection with the Amsat-Oscar-1 satellite project, two series of aircraft flights of a prototype two-watt linear translator developed for the satellite were sponsored by Amsat during 1971, one covering the East Coast of the United States and the other covering the West Coast. The first series was made with checkered flights on May 2 and 12, and culminated May 15-16 with a two-day flight which covered from Virginia to Maine, parts of Canada, and west to Illinois. The May 15-16 flights were made on the occasion of World Telecommunication Day celebrated May 17, and a report on Amsat's participation was sent to the International Telecommunication Union (I.T.U.). It is estimated that some 200 to 300 stations participated in this flight test.

The second series of flight tests was conducted by the Jet Propulsion Lab. Amateur Radio Club, an affiliated member club of Amsat, with flights over California on Aug. 23, Sept. 11 and 25. This series was perhaps even more successful, and one station alone reported completing 17 two-way contacts through the translator.

The main purpose of these translator flight tests aboard aircraft is to help interested Amateurs prepare for operation with the Amsat-Oscar-2 satellite and to gain useful technical and operational experience to help insure readiness in using the satellite once it is in orbit.

World Administrative Radio Conference.—The I.T.U. World Administrative Radio Conference, held in Geneva, Switzerland, completed its meeting in June. The Space Conference defined a new "Amateur Satellite Service" and made provisions for Amateur satellites to operate in the 140, 10, 2 and 1.2 MHz bands, as well as in a new band 24 to 24.05 GHz. Amsat provided much of the background supporting material on Amateur satellites to several of the delegations represented at the Space Conference, and also advised the I.A.R.U. Bureau team which represented Amsat at the Conference.

Amsat Addresses and Presentations.—Amsat was represented at numerous Amateur gatherings during the year, and provided several lectures for a University of Hartford graduate workshop organized to teach Amateurs to use teachers of all grade levels to use Amateur satellites as an educational tool for teaching science and physics in the classroom.

Amsat members presented a paper, "Spacecraft Telemetry Systems for the Developing Nations," co-authored with members of the W.L.A. Project Australia Group at the I.E.E.E. National Telemetering Conference held in Washington in April, and also provided material for expanded Space Communications sections of the 1972 A.R.R.L. and R.S.G.B. Handbooks.

A report and recommendation on Amateur satellites were prepared by Amsat members and presented at the February Session Joint Meeting of the International Radio Committee Committee (C.C.I.R.). Additional documents are now being prepared by Amsat for introduction into future C.C.I.R. meetings.

FUTURE ACTIVITY

Amsat-Oscar-2.—Significant progress was made during the past year on Amsat-Oscar-2 (A-O-2), which is now being readied for possible launch next year. The prototypes and flight units have been completed for the following subsystems: A-O-2B, the 34-channel Morse code telemetry system developed by WSCAY; the 432-to-146 MHz ten-watt linear translator developed by DJ4ZK and DJ5SQ in Munich, Germany; the two two-level 146-MHz transponder built by WURD, WA4DGU and K3JTE, the 25-function command system provided by W.L.A. Project Australia, and the instrumentation converter provided by WE2EY. A-O-2 Project Manager in charge of the type of W.L.A. Project Australia 146-to-432 MHz IMU repeater and 60-channel teletype telemetry encoder were completed.

A breadboard of Codestore, a Morse code message storage device developed for Oscar satellites was constructed. This system is designed to store emergency messages, operational information on the satellite and orbit information, for repeated transmission to the ground over the satellite telemetry system. The messages can be loaded and reprogram-

med by ground stations. A further description of Codestore is contained in the June 1971 issue of "Amsat Newsletter". Work is currently proceeding on the final flight-hardware and on the solar cell and wiring harness assemblies.

Amsat received word in February that N.A.S.A. will undertake the launch of A-O-2 and it now appears most likely that A-O-2 will be launched in the ATS-G meteorological satellite into a planned 1500-km. polar orbit. In addition, the U.S. Federal Communications Commission notified Amsat that they would waive certain American regulations as they apply to A-O-2. Radio Amateurs and Technicians licensees in the U.S. to operate through the two-to-ten metre translater.

ATS-G Syncart Experiment.—Two years ago Amsat submitted a proposal to N.A.S.A. to provide amateur experiments for launch on the ATS-G Applications Technology Satellite in 1975. Amsat recently amended this proposal and has now proposed a Syncart (Synchronous Amateur Radio Translator) experiment to N.A.S.A. As proposed, Amsat will provide to N.A.S.A. at no cost, a 146-to-435 MHz 20-watt linear translator for integration into the N.A.S.A. ATS-G spacecraft. ATS-G is planned for geostationary (synchronous) orbit and will contain a 30-foot parabolic reflector available for the Syncart experiment, providing the rare opportunity for Amateurs to use a synchronous satellite on a regular basis with modest Amateur equipment.

Syncart is designed to demonstrate the usefulness of the Amateur satellite service in providing emergency communications, educational training, and experiments with small-terminal multiple-access communications. Further details on the proposal and the characteristics of the experiment were published in the June 1971 "Amsat Newsletter".

Skylare-Skylab Amateur Radio Communications.—Another proposal was submitted recently to the Goddard Space Flight Center, Amsat, to conduct an amateur station activity for Skylab, the N.A.S.A.'s manned orbiting laboratory scheduled for launch in 1973. The project, named Skylare (for Skylab Amateur Radio Communications), is designed to encourage the use of space techniques by Amateurs throughout the world, while providing the opportunity to communicate directly with astronauts in Skylab operating on 140 metres, 2.4 GHz during their time in space. Additionally, Skylare could provide emergency backup communications for the astronauts who will be out of contact with N.A.S.A. tracking stations for periods as long as ninety minutes. Skylare is also expected to have educational applications in schools and at home.

Amsat members at the N.A.S.A. Goddard Space Flight Centre, Manned Spacecraft Centre, and Marshall Space Flight Centre have been active in assisting with this project. Dr. Owen Gandy, one of the astronauts in training for Skylab, has indicated his interest in participating in Skylare activity. He is one of Amsat's more recent members, and happens to be a W5LFL.

Skylab-A is planned for a 430-km. circular, Sun-synchronous orbit, designed to keep it within range of most Amateurs around the world. The use of the 10 metre band for Skylare would enable widespread participation using readily available Amateur equipment. Further details on the Skylare proposal can be found in the Sept. 1971 "Amsat Newsletter".

FUTURE ACTIVITY

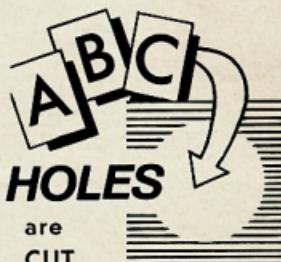
In summary, Amsat is now involved in three major projects, extending through the mid-seventies. Amsat-Oscar-2, expected to be launched in 1972, has a planned lifetime of one year, thus providing Amateur satellite communication service to 1973 or possibly 1974. Skylare, accepted for flight aboard Skylab, is expected to fly around April 1973 and last until the end of 1974. The third project, Syncart, if approved, can be expected to fly on the ATS-G satellite around 1975, providing a regular communications capability in geostationary orbit until 1978 or even later if all goes well. It is hoped that these three projects will bring about new achievements in the Amateur satellite service for which we can all be proud.

(Sgn'd.) Perry L. Klein, K3JTE.

KILOVAC VACUUM RELAYS

From R. H. Cunningham Pty. Ltd. comes a brochure detailing the specifications of Kilovac vacuum relays with rated operating voltages upwards from 2.5kV. The Kilovac Corporation of Santa Barbara, California also market Downy key co-axial relays and Fenta r.f. power tubes.

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CORRESPONDENCE

(Continued from Page 9)

fast accomplished in a para, in the VHF Notes. We are told to communicate with the W.I.A. Federal Repeater Secretariat if we have any problems or suggestions concerning repeaters, but I am still waiting on their replies to letters of mine dated 25th May and 12th July, 1971. As the number of Amateurs using repeaters far exceeds those who will be using the satellite, the Committee of the Geelong Repeater would like to hear their views expressed.

—D. J. Laidlaw, VK3ZTA, Secretary, Geelong Amateur Radio Translator Group.

The Federal Executive of the W.I.A. wish to assure the Geelong Amateur Radio Translator Group and other interested parties that no documents have been made concerning repeater frequencies, and that it is the intention of the Institute to make changes of this nature without members being given prior notice and opportunity for discussion. It is true that a proposal has arisen since the 1968 Wodonga meeting and that the proposal is of great degree of importance since the I.T.U. Space Conference held in Geneva last year. The question will no doubt be raised at the next Federal Convention in the Melbourne area this year over the Easter weekend, and all interested parties are asked to make sure they contact and pass along their views to the Federal Repeater Secretariat and their Federal Council to enable all points of view to be fully discussed at this Convention.—D. H. Rankin, Federal Vice-President, for Federal Executive.)

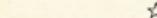
"SALTY" W3HWA PASSES ON

Editor "A.R." Dear Sir,

I was recently in contact with WB3QZW in New Jersey and received information regarding a very well known Amateur to Australia has passed away on November 13, 1971.

WB3QZW, Sidney ("Salty") C. F. C. Belcher passed away on November 13, 1971. "Salty" was a very well known Amateur in Australian circles, c.w. and s.s.b. and was especially known while he was the Chief Radio Officer of the "Queen Mary" before the ship was sold to an American company.

—Howard A. Lilley, VK2AYT.



OVERSEAS MAGAZINE INDEX

Key (all 1971): I. "Ham Radio," July 2; "CQ," Oct.; 3, "73"; July; 4; "QST," Aug.; 5; "Radio Communication," Sept.; 6; "Shortwave Magazine," Aug.; 7; "Radio ZS," Aug.

Antennas: Rejuvenating that old Prop-Pitch Rotator (4); Review: Kirk Helicaloid Beams (\$90 to \$100 in U.S.A.) (4); Dipole Facts (6).

Accessories: CRT Intensifier for R.T.Y. (1); 6 mx Antenna Coupler (1); Audio Signal Generator (3); Beam Box for C.W. Ops. (2); A Technique for Built-in Frequency Counter in Linear Amps. (4); How to make a low-cost Keying Mechanism (4); R.F. Triggered C.W. Monitor (this fellow has designed the very thing) (6).

General: The scandal of the Balkans and North Africa, the story of their Amateurs (2); Why use... Transwatts and disadvantages (2); 2 m.m. band, timing and electronics (2); "CQ" Reviews: The Swan FM-2X (2); Semiconductor Curve Tracer for the Amateur, Part 1 (4); Tale of Two Crystals (4); What's new in amateur stations (4); Curse of the "Chamarr" maritime capsule in a tri-maraner (6); Moonlight Madness, ZS1SP tells the story of an emergency communications operation in Capetown during flooding (7); History of Amateur Radio in South Africa (7).

Receiving: IC Rx for 80 m. (1); Pip-Squawk Mk. II. (4); Review: Ten-Tec RX10 Comm. Rx (4); Tuning the V.H.F./U.h.f. Spectrum (7).

Transmitting: The Motorola 80D on 220 MHz. f.m. (2); Solid State 2 m.m. Tx. (1); Miniature Add-on Oscillator for 2 m.m. (3); A 3-M Franklin V.L.O. claims extreme frequency stability (4); The Cabon Kit is mobile/portable in compact (4); 80 m.m. Integrated Circuit Transceiver (5); Transistor Modulator, a.m. is not yet dead (6).

Other: IC Audio Processor (3); Camera Conversion from fast to slow scan t.v. (1); Home-brew DX prediction (4); A Pulse Count Discriminator Unit (5); Varistor Triples for v.h.f. (6); High Impedance Voltmeter (6).

SMALL MECHANICAL DRIVES

Four new miniature drives suitable for fine manual tuning of equipment ranging from domestic radio receivers to professional telecommunications equipment and scientific instruments have been added to the range of small mechanical drives made by Jackson Brothers (London) Ltd.

The Accelerator Spindle Drive—Cat. No. 4589/5 is a cord drive unit intended for modern radio receivers with extra-long scales. It incorporates a 10 mm. dia. 15 mm. zinc-alloy flywheel driven through nylon-to-brass step-up gears at more than twice the speed of the drive-shaft. The complete unit weighs only 6 oz. (170 g.). It provides an inertial effect equivalent to a much larger flywheel, permitting rapid traverse of the scales.

The Nylon Bearing Spin-wheel Shaft—Cat. No. 4589/Nylon—Is another new cord drive to which various flywheels can be fitted. It provides an ultra-smooth "quasi" feel suitable for expensive stereograms and radios; it incorporates—in place of the usual brass-to-brass bearing—two polybenzylidene nylons placed between a stainless steel shaft and a brass bushing.

The 16:1 Epicyclic Ball Drive—Cat. No. 5595—is a powerful ball connect drive suitable for transceivers, capacitance bridges, signal generators, etc. It provides a 16:1 reduction ratio between coaxial input and output ports, with no limiting output torque beyond which internal components without damage greater than 39 oz. in. (2.2 kg-cm.). It measures 2-1/8 inches (54 mm.) overall length by 1-7/16 inches (36.5 mm.) diameter of mounting flange.

The Twin-Speed Epicyclic Ball Drive (Fig. 3)—Cat. No. 5595—is intended for driving a single positioner or two independently controlled small radio receivers. Two coaxial inputs provide direct drive for coarse adjustment and a 5:1 reduction for fine adjustment. Limiting output torque is 8 oz. in. (0.6 kg-cm.).

The earlier G80 Drive (Fig. 4)—Cat. No. 5599—built to British Post Office specification and intended for use in communications transmitters/receivers, is now available with either 100 or 360 degrees movement of the output shaft. It provides an 80:1 reduction ratio, without backlash, between coaxial input and output ports, and consists of a coaxial input drive and an 8:1 gear drive in series. Limiting output torque is 8 oz. in. (1.7 kg-cm.).

Further information can be obtained from Jackson Brothers (London) Ltd., Kingsway, Waddon, Croydon CR9 4DG, England, or from the Australian agents, British Merchandising Pty. Ltd., Shaw House, 49/51 York Street, Sydney, N.S.W., 2000.

FED REPEATER SECRETARIAT

(Continued from Page 8)

Region 3

ZL repeater channels: 145.6, 145.65, 145.7, 145.75; ZL simplex channels: 145.8, 145.85, 145.9, 145.95.

145.6, 145.85 and 145.9 to be used;

ZL amateur repeater outputs: 145.73, 145.75, 145.85;

VK repeater outputs: 145.6 (Ch. 1), 145.7, 145.8,

145.9 (Ch. 4);

VK simplex channels: 145.85 (Ch. A), 146.0

(Ch. B);

Satellite: 145.8.

A comment is worth to be set aside. It would appear that the present A-O repeater of 145.95 MHz. centre frequency plus or minus 25 or 50 kHz. is best. Whilst this is in the part of the band occupied by Region 1 beacons it is currently free from fixed channel operations. If it is unlikely that the Germans would enthuse about closing down or shifting their repeat frequencies as we are.

The following Ch. 4 systems are current in VK: Adelaide, Geelong, Gippsland, Sydney, Newcastle (not yet in use) and Northern Tasmania.

There is a Federal Convention to be held this Easter in Melbourne. A policy is needed on future Australian involvement in the Amateur satellite programme and the frequencies of our systems. Arising from this would be

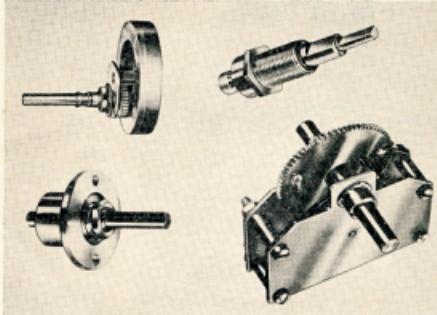


Fig. 1: top left; Fig. 2: bottom left; Fig. 3: top right; Fig. 4: bottom right.

AROUND THE TRADE

Our good advertisers Hy-Q Electronics Pty. Ltd. announces the opening of their office in Sydney from Feb. 1 in Suite 204, 284 Victoria Ave., Chatswood, N.S.W., 2067, telephone (02) 418-0997. Telco 2201. Mr. Mr. Jeff Watten as Area Manager for N.S.W. and A.C.T., providing technical and sales assistance to many clients in these areas.

From Ball Electronic Services and from "Ohm" Magazine comes news of a raffle to win Yassu Mussen FTJ01 for just \$US2.00. Further details from Ohm Magazine available through F.E. Publications, HARTS, of Hong Kong, or from Fred VK9FHI, the recipient of the proceeds towards a tractor for the Alpine Memorial School, Ewasse, New Britain. Ball Electronic Services are Australian Agents for Yassu Mussen and offer both sales and service.

Andrew Antennas of Melbourne announce a successful \$750,000 contract by P.M.G. Dept. to supply and install repeaters for the Department. Land-line telephones link, comprising 109 microwave antennas on 48 towers due for completion early 1974. The 10 and 12 ft. dish antennas are for manufacture at their Reservoir plant where they operate Australia's largest metal spinning machine.

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the frequency segments in the area for International satellite work and the policy to be adopted if World Agreement places the International segment within the present Australian allocation. Ought we to move all our systems now? Is International agreement the possible answer to these and allied questions should be discussed NOW by interested parties and the decisions passed on to your Federal Councillor for his guidance during the Convention.

Other questions which the active v.h.f./u.h.f. operator should be considering are:

(1) The necessity for band planning so that all modes and systems can be accommodated without undue confusion;

(2) The need to determine a beacon policy so that the development, location, method of operation and frequency bands can be implemented to achieve the most possible results for Amateur and scientific uses;

(3) It was suggested that the 2 mx simplex channels A and C be altered by 4 kHz. from present frequencies as to become 145.85 and 145.15 MHz. respectively. Is there any merit for this move?

(4) The relative need to consider the adoption of the 10 m.m. repeater channel in the Melbourne area becomes too great. If one is adopted it would have to fit into a national scheme so that all users could equip themselves to suit.

VHF

Sub-Editor: ERIC JAMIESON, VK5SLP
Forreston, South Australia, 5233.

Closing date for copy 28th of month.
Times: Eastern Summer (Daylight Saving Time).

AMATEUR BAND BEACONS

VK0	52.525	VK0MX, Mawson.
	52.100	VK02VS, Macquarie Island.
	53.839	VK0PF, Casey.
VK2	52.230	VKEII, Sydney.
VK3	144.390	VKEV, Vermont.
VK4	52.490	VKA4W1, Townsville.
VK5	144.390	VKA4V4, near Toowoomba.
	53.000	VKS3V, Mt. Lofty.
VK6	144.300	VKS3V, Mt. Lofty.
	52.900	VKS3V, Carravon.
	32.950	VKE6VE, Mt. Barker.
	144.500	VKE6VE, Mt. Barker.
	145.610	VKE6VE, Bickley.
VK7	144.390	VKT3VF, Devonport.
VK9	144.390	VK9M, Macquarie Island.
ZL1	145.100	ZL1VHP, Auckland.
ZL2	145.200	ZL2VHF, Wellington.
ZL3	145.300	ZL3VHF, Christchurch.
ZL4	145.400	ZL4VHF, Dunedin.
JA	50.090	JAHGCF, U.S.A.
KH6	50.101	KH6EQI, Hawaii.
	50.015	KHEERU, Hawaii.
HL	50.100	HLBWL, South Korea.
ZK	50.100	ZK1IA, Cook Island.

Some changes to the beacon list this month. Firstly, a letter from Mr. J. K. Walter, of the Bureau of Ionospheric Prediction Service Division advises a frequency change of the Casey beacon from 53.844 to 53.839 MHz. The present power of that beacon is 11 watts to a frequency 100 kHz. In this case it is expected to be increased to 100 watts shortly. Mr. Walter also confirms that two 6 metre beacons will be taken to both Casey and Mawson in 1972, both with an output power of about 400 watts. Call signs have yet to be assigned when the P.M.G. Dept. finally gives its approval.

The second item from Mr. Walter's letter indicates that several Sydney Amateurs reported reception of a 6 metre beacon with a call sign believed to be prefixed VK0. VKN (possibly VK0PF) Casey on 144.325 MHz on 27/11/71. At this time and in the following two days Phil VK0PF at Casey reported receiving 6 metre beacons from Australia. These reports are not definite, but they do suggest a distinct possibility of the occasional use of Sporadic-E propagation between Antarctica and Australia. If any readers have received the Antarctica beacon, Mr. Walter would be pleased to hear of it. Address: Assistant Director, I.P.S. Division, 162 Goulburn St., Darlinghurst, N.S.W. 2010.

While we are talking about beacons and the Antarctic area in particular, I am pleased to report the first hearing of a VFO beacon, that on Macquarie Island at 1945 hrs on 2/1/71. The beacon was heard on VK5ZMW/P from 52.100 MHz, call sign in m.c.w. 11 times before fading into noise, sig. SI-2. Further details of this station from Chris VK0RC and Tony VK0KKA indicate power output to be 25W, p.e.p. 4 kHz, up to 30W. The tone length varied as vox circuit of FT200 gave "CQ VK02ZWS Macquarie" then paused for 35 seconds while listening with vox open, then repeat. If you hear this station, you must reply in the pause period as a reasonable signal at the receiving bandwidth is 2 kHz, preferable using c.w. or 4 to 5 w.p.m. (due to auroral flutter effects making a.m. and s.s.b. signals unreadable). Tony indicates an interest sufficient to go ahead with a linear using a 4CX250B for transmitter purposes, power level will be used. Good luck to you Ross, hope you can make it a two-way next time.

52 MHz. DX

The 1971-72 Sporadic-E DX season for 52 MHz has certainly been a very good one. Something has been available almost every day since mid-November. Several things have stood out this year, probably the most prominent being the number of stations heard on s.s.b. mostly transceive. Coupled with this, more and more of the remaining a.m. stations were calling "CQ DX-listening" this frequency before tuning," indicating a greater awareness of the increase in transceive opportunities.

Two further points come out of this of course. One is that all stations will need better frequency stability with a greater number of

MOONBOUNCE ON 144 MHz. FIRST VK TO VE CONTACT

Whilst others have been making good use of 52 MHz Sporadic-E propagation, Ray VKJATN succeeded in making two contacts via the moon on 1/1/72, on 144.000 to KSMYC and on 144.004 to VETBQH.

He started to transmit at 2140 to 2142 (his normal transmitting period) and stood by for three seconds and back came WSMYC, and operated with him from 2142 to 2150, signals 43B; then from 2152 to 2154 with VETBQH, signals 32B. Signals continued to be heard until 2226-2228, by which time the moon was getting too high for antenna.

Ray reported the half hour "window" for contact via the moon as being rather unusual, and the longest he had experienced.

A fine effort Ray, and we are glad to be able to rank you amongst the v.h.f. fraternity of Australia.

narrow-band s.s.b. receivers being used—drifted signal, particularly if a.m. with frequency modulation is well nigh impossible to receive on a sharply tuning receiver. There are at the present time some very poor s.s.b. signals on 52 MHz, signals very hard to tune. It is hoped that the operators will give themselves a chance to improve their stations too, and some of those occupying 20 to 40 kHz of the band due to shouting into the microphone with the gain control well up when operating DX might well look at their operating procedure and make a few changes, especially as well on 20 metres too, I could name several consistent offenders on this band!!

Other interesting things to have happened on 52 MHz, during December mostly have been the working of the four ZL districts, and of particular interest to VKS3ZMW, who has been working after a break of quite a few years, with David ZL4PG and Stan ZL4MB most active. Stan has indicated he intends doing some portable operating for the greater part of the year on Sodwana and Sunday morning, being in VK before the stations commence. Likely operating times will be between 1100 to 1200 hours, frequency 51.900 MHz, and on s.s.b. He may also try 52.007 MHz. Geoff VK5ZMF was just about jumping for joy when he heard the first VK5ZMW and VK6ZDXX, but could not get them to 160m below 32 MHz. That's a long haul to the West and a path not often open, so can understand Geoff's ire! Geoff was a good signal in VKS this year and worked plenty of stations.

No content with summer in the Continent so far, the Amateurs then turned their beams north on 29th December, and quite a few worked Rex VK3ZAP. Barry VK5ZMW has not forgiven me yet for working Rex over him. Barry was trying out his new L.E.D. QRP 15Watt dipole and was working VK5ZMF at the same time as I did with my 100W, the result was obvious!! However, Barry did eventually make it, which is a pretty fine effort (1859 miles with 5w.). Geoff VK5ZGF/S gave quite a number of VKS stations for the year from Alice Springs, so there would be quite a few people who worked all States this year, plus VK9 and four ZL districts, not bad going chaps!

While all this sort of thing goes on, Wally VK5ZWW plots along with his meteor scatter experiments, and on 11/12/71 worked VK3AOT by this mode, with one burst of 8 to 9 seconds at 5 x 9.

Geoff VK5LT heard Channel 5A in Wollongong on 29/12/71 and a relatively strong reflection about 18 minutes later. 5A has also heard rather weakly at my own QTH on the same date at 2000 hrs. This is the first time I have positively heard the t.v. station, and lends some support for my hopes that 144 MHz DX will start to come back again next season.

10 GHz. AUSTRALIAN RECORD

On 10,000 MHz, at 1245 on 30/12/71, Des VK5SCU/P was at Black Top Hill, Elizabeth, contacted Barry VK5ZMW/P at Kulpara, South Australia, distance 10 miles, signal strength at VK5CU 5 x 9, and at VK5ZMW 2 x 5. VK5CU on 10040 MHz, and VK5ZMW on 10010 MHz.

I am indebted to Barry for the following report:

"Barry was overcast with an extreme haze, which made visibility poor, in fact the location could not be seen. Wind and rain was the forecast, and tossing the coil was the deciding factor whether to go or not. A

2 mx link was used as a back-up with a 4 element yagi, which proved invaluable for determining the correct direction for 10 GHz. Des VK5SCU/P was at a hill above Salisbury but no 3 cm contact was made. The location was decided, this being Black Top Hill.

"After about 30 minutes and no contact being made, we decided to review the situation. The 2 m yagi was moved through the centre of Port Wakefield, which was then shown from Kulpara. 'Les' antenna should therefore be pointing through Port Wakefield, and a check indicated 'Les' antenna to be too far north. A re-alignment of his antenna and contact was made. The problem was not critical, but critical in direction, some 5 degrees swing in signal.

"The equipment consisted of all solid state gear except the klystron. VK5CQ used a separate transmit and receive dish, and VK5ZMW one single dish. Power output from the transmitters about 100 mW. This contact was made after some 20 years of building, trying and failing. Eddie VK5CQ was the first to make a v.h.f. (Very Happy Fellow!)."

Congratulations to both of you, this distance will set a target for someone else to better. It will certainly be an Australian record and may not have been bettered by many where.

GENERAL

From Bob VK3AOT comes an item or two, mentioning that on 27/12/71 Peter VK5BFG heard Phil VK5V on 50 m茨 and they are keeping shreds on 20 m茨 each night to keep their interest doing. On 28/12/71 shreds was evident and allowed some operators their first contacts from VK3 to VK1 by operating Eddie VK5CQ. Eddie also worked VK1ZIS on 144.000. On 29/12/71 Peter VK5BFG worked VK3ZAP. On 432 MHz, Ron VK5AKC worked VK5VZL a distance of 270 miles. Bob also advises that the VK4 beacon VK4VV is temporarily off the air due to an impending call sign change, a new electronic keyer will be put in use. He also mentioned Kerry VK5GSU at Ceduna, on 39/12, while Bob VK5VZL, the 2 m茨 beacon near Albany at S3, and on 31/12 at 84 while VK5SVF had been S5. No contacts here.

John VK7JV writes to advise Col VK7KWC left for Casey in the Antarctica in January and has the call VK0JVJ, and John VK7KJV will be his QSL manager. Col has, or has access to, equipment used with the Australia 144-432 MHz and the AMS 144-432 MHz.

The VK5 Field Day (5/12/71) proved a great success. The band opened to VK8 for an hour or more and up to 16 stations were worked from the band on 32 MHz. Few contacts also to VK5 and VK6.

So generally speaking and looking back over the past month, the v.h.f. operator has really had a ball and with gradual improvement in equipment, distances covered most notably in equipment distances what the frequency. I conclude this month with a re-telling of a short joke taken from the pages of the W.A. V.h.f. Group News Bulletin, and which appeals to me: "Speaking of gifts, did you hear about the chap who gave his ma-in-law a Jaguar for Christmas?" Both he and the animal were well satisfied."

Finally, it appears the deadline for copy for A.R.A.'s book has been altered. My notes were sent to him on 10/12/71 and he said, so will it be necessary to ask correspondents to have their information in his hands by 28th of each month. Your help in this direction will be much appreciated. 73, Eric VK5LP. The Voice in the Hills.

Stop Press.—The I.P.S.D. supported by the W.I.A. held a P.A.G. meeting for one year from Feb 1 to establish two keyed radio stations to conduct radio propagation experiments between Antarctica and Australia. The mode is 2A2 at 200W, final input and the call signs, frequencies and locations are:

VK5GCF—90°E, Casey.
VK5MMA—33°S, Mawson.

VK02ZWS Macquarie Island has started transmitting on the 6 m茨 band—52.1 MHz—and will be on between 7 and 9 p.m. Melbourne time. Is looking for contacts.

During the VK5 Field Day on 2/1/72, Des VK5ZBZ/P on Mt. Bindie worked ZL1TG/T, ZL2TL/V and ZL3AR/2 on 2 m茨, probably in his car. His VK5 was using a am. on 144.21 MHz. Peter VK2TK/2 worked two ZL stations. On 3/1/72 Bob VK5ZDX in Adelene at Albany a distance of almost 1200 miles on 144.21 MHz a.m. Kerry VK5GSU at Ceduna worked Bob VK6ZG/F who was portable near Mt. Barker, and VK5VZL. These contacts are believed to have been made traps. The contacts with three stations now active in Albany on 2 m茨, no doubt many more transcontinental contacts will be achieved over the next couple of months.

NEW CALL SIGNS

OCTOBER 1971

- VK3GZG—G. J. Zimmer, 1/15 Clendons Rd., Arncliffe, 3143.
- VK3JK—C. W. Gliddon, 9 Gloria Ave., Dandenong, 3175.
- VK3KMA—D. L. Bradford, 2 Ralund Rd., Doncaster, 3108.
- VK3YH—A. B. Varley, 65 Lasandra Ave., Forest Hill, 3131.
- VK3JAD—B. B. Hocking, 45 Wallace St., Morwell, 3840.
- VK3AFM—F. M. Wrobel, 38 Hilton St., Glenroy, 3046.
- VK3JAFX—R. A. Hosking, 62 Thomas St., East Brighton, 3187.
- VK3AMQ—M. G. White, 62 Peter St., Box Hill North, 3129.
- VK3ASW—K. M. Morris, Lot 17, Mast Gully Rd., Upwey, 3156.
- VK3ATE—Footscray Institute of Technology Radio Club, Ballarat Rd., Footscray, 3011.
- VK3AUH—D. D. Tanner, Lye & Dixons Rd., Ripplebrook, 3818.
- VK3AZG—I. B. Williamson, 62 French St., Laide, 3075.
- VK3AZT—J. B. Payne, 97 Ringwood St., Ringwood, 3134.
- VK3BWP—W. F. Colborne, 89 Hill Rd., North Belgrave, 3104.
- VK3BCG—R. G. Clay, 13 Brown St., Traralgon, 3844.
- VK3ZGK—R. G. Slade, 23 Russell St., Greenvale, 3088.
- VK3GZY—W. J. Kirkhope, 271 High St., Lower Templestowe, 3107.
- VK3KZP—J. C. Parker, 7 Wellington St., Midland, 3165.
- VK3ZWF—A. A. White, 1961 Dandenong Rd., North Clayton, 3168.
- VK3ZWZ—C. J. Gamble, Lot 19, Rosemarie Circuit, East Rosanna, 3084.
- VK3ZYV—R. Young, 1 Bland Ave., Dandenong, 3175.
- VK3ZZX—J. L. Watkins, 4 The Grove, South Camberwell, 3124.
- VK4LH—R. C. Kelly, 46 Gevegan St., North Burwood, 4070.
- VK4ZA—R. C. Atkinson, 126 Marshal Lane, Kenmore, 4036.
- VK4ZCL—G. J. Castledine, 10 Park Rd., Arana Hills, 4054.
- VK4JZU—R. J. Williams, 29 Nerang Coast Rd., Miami Keys, Broadbeach, 4217.
- VK4ZWP—P. L. Williamson, 11 Harley St., Enoggera, 4551.
- VK5JV—R. W. Williamson, 2/33 South Esplanade, Gladstone, 5045.
- VK5NU—G. A. Dowse, C/o. Supt. Radio Branch, Flinders St., Adelaide, 5000.
- VK5UU—Z. P. Azary, C/o. Supt. Radio Branch, Flinders St., Adelaide, 5000.
- VK5UV—R. J. Cunningham, 59 Teusner Dr., Morphett Vale, 5162.
- VK5VZ—C. G. Wilson, 59 Willcox Ave., Prospect, 5082.
- VK5ZT—D. J. Brown, 17 Kentish Rd., Elizabeth Downs, 5113.
- VK5ZU—T. M. McNamee, 12 Cunguna Ave., Park Holme, 5043.
- VK5ZPS—P. R. Smith, P.O. Box 49, Moana Beach, 5169.
- VK6DQ—W. R. Woodley, 53 Marrawa Way, Wantirna, 3107.
- VK6EG—G. A. Warner, 82 Broadway, Bassendean, 6054.
- VK6SO—J. Solis, 33/39 Herdsman Pde., Wembley, 6109.
- VK6ZCQ—G. J. Willesby, 48 View Tce., East Fremantle, 6158.
- VK6ZOK—G. J. McDonald, Station: 36 Hope Cres., Lemurden, 6076; Postal: 1 Markham Way, Maidaville, 6057.
- VK6ZHI—P. A. Bradshaw, 24 Riga Cres., Willetton, 6155.
- VK6ZIW—A. B. Wallace, Station: 30 Sulman Rd., Wembley Downs, 6014; Postal: P.O. Box 23, Scarborough, 6019.
- VK6ZFJ—G. J. Farnell, Station: 41 Brighton Rd., Scarborough, 6019; Postal: P.O. Box 87, Scarborough, 6019.
- VKTZG—G. A. Simpson, 217 Best St., Devonport, 7310.
- VK8RM—R. W. Maginness, 56 Gregory St., Parap, 5790.
- VK9AJ—R. Nimmo, C/o. S.I.L., P.O. Ukarumpa.
- VK9EL—E. Seumahau, P.O. Box 793, Lae.
- VK9GS—G. Sedencamp, P.O. Box 3155, Port Moresby.
- VKDHT—Hitech Radio Club, P.O. Box 793, Lae.
- VK9VG—G. W. van Galen, P.O. Box 723, Lae.
- VK9XW—G. C. Woodford, Christmas Island, Indian Ocean.
- VK0JV—C. S. Perger, Casey Base, Antarctica.

ALTERATIONS

- VK3OQ—J. F. Dalsted, 14 Firth St., Doncaster, 3108.
- VK3JS—A. J. Simms, Forest Office, Gelli-brand River, 3239.
- VK3AKQ—K. J. Echberg, Lot 94, Thurlooo Dr., Safety Beach, 3936.
- VK3AVU—C. R. Lobb, Addition of initial R.
- VK3AW—W. J. Falconer, 39 Stanley Gr., Canterbury, 3120.
- VK3AXR—C. G. Williams, Flat 6, Parton Crt., Glenhuntly, 3163.
- VK3BD—R. N. Field, 1242 Burke Rd., North Balwyn, 3104.
- VK3WV—The Institute of Australia (Federal Executive), 19 Cannes Gr., Beaumaris, 3193.
- VK3ZCQ—D. Johnson, 56 Holmes Rd., Moonee Ponds, 3039.
- VK3ZCR—J. Bishop, "The Mist," One Tree Hill, Ferny Creek, 3786.
- VK3ZKL—T. A. Slammin, Addition of /T.
- VK3ZPS—P. J. Armstrong, Church Rd., Yuleton, 3086.
- VK3ZRF—F. W. Banks, 901 Centre Rd., East Bentleigh, 3165.
- VK3ZTA—D. J. Laidlaw, 4/24 Northam Ave., Highton, 3166.
- VK3ZV—J. Conroy, 783 Ferntree Gully Rd., Wheelers Hill, 3170.
- VK4HV—R. J. Thorne, 3 Madison St., Sunnybank, 4109.
- VK4IS—A. L. Stehn, Station: Bli Bli Rd., Narrabeen, 4550; Postal: M.S. 1305, Nambour, 4565.
- VK4KD—D. A. Ayers, 42 Thomas Dr., Chevron Island, Surfers Paradise, 4217.
- VK4Q—C. R. Rutson, 78 Park Rd., Yeronga, 4104.
- VK4ZGZ—G. D. Dixon, 9 Emily St., Deagon, 4107.
- VK5RSX—G. W. Luxon, 203 Belair Rd., Torrens Park, 5062.
- VK5TA—D. J. Guzzens, 20 Catalina Rd., Elizabeth, 5112.
- VK5WI—Wireless Institute of Australia (S.A. Division), C/o. C. G. Luke, Loma Linda Gr., Wattie Park, 5066.
- VK5WE—R. J. Russell, 33 Devonshire St., Walkerville, 5081.
- VK5YA—J. M. Glynnas, 67 William St., South Plympton, 5038.
- VK5ZQ—M. R. Burford, 261 Belair Rd., Torrens Park, 5062.

- VK5ZKE/T—J. L. Jones, 70 Clayton Rd., Saltisbury East, 5109.
- VK5ZKP—K. J. Pearce, 25 First Ave., St. Peters, 5069.
- VK6ZK—T. M. Stanicic, C/o. M.K.M.O. Camp 7, Roebourne, 6718; Postal: P.O. Box 350, Roebourne, 6718.
- VK9MM—M. McBride (Fr.), C/o. Capuchin Mission, Tarl, S.H.D.

CANCELLATIONS

- VK3FS—A. J. O'Brien, Deceased.
- VK3GJL—L. F. Schmidt, Transferred to Qld.
- VK3ADH—D. L. Bradford, Now VK3MA.
- VK3ALV—G. Watson, Not renewed.
- VK3ALY—T.—L. J. McKay, Not renewed.
- VK3BBM—C. Marschke, Transferred to Qld.
- VK3BDM—G. N. Marks, Transferred to Port Moresby.
- VK3YBL—R. K. Peters, Now VK3AFM.
- VK3ZEM—Vocational Institute of Technology, Now VK3ATE.
- VK3GA—T. D. Gregory, Transferred to Qld.
- VK3ZHL—W. G. Gliddon, Now VK3JK.
- VK3ZJW—R. J. Williams, Now VK3AJV.
- VK3ZQL—A. J. Blanch, Not renewed.
- VK3ZWP—B. B. Hocking, Now VK3ADB.
- VK3ZXX—J. C. Zimmer, Now VK3GZ.
- VK4DT—J. H. Ginsberg, Transferred Interstate.
- VK4UL—P. H. Hubsher, Deceased.
- VK4ZL—L. P. Hubsher, Deceased.
- VK4ZLK—L. C. Kain, Now VK4UL.
- VK4ZRT—R. C. Atkinson, Now VK4ZA.
- VK5WA—D. A. Cartwheel, Not renewed.
- VK5IN—K. V. Hanson, Not renewed.
- VK5TZ—J. B. Dennis, Transferred to N.S.W.
- VK5ZAT—E. Leist, Not renewed.
- VK5ZAT—C. J. Hayes, Not renewed.
- VK5ZCT—R. J. Cunningham, Now VK5UV.
- VK5ZFR—N. F. Francis, Not renewed.
- VK5ZGU—J. W. Coates, Not renewed.
- VK6EJ—E. J. R. Cowles, Not renewed.
- VK6MD—M. D. Scott, Left country.
- VK6SP—R. J. Parker, Transferred to T.P.N.G.
- VK6SRW—R. J. Watson, Not renewed.
- VK6SWQ—W. M. F. Wattsworth, Not renewed.
- VK6ZCZ—I. J. Hosie, Not renewed.
- VK6DW—D. W. Stephens, Returned to U.S.A.
- VK6SS—S. S. Stephens, Returned to U.S.A.
- VK6ZRM—R. W. Maginness, Now VK3RM.
- VK6EP—E. A. Parker, Not renewed.

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DIVISIONAL NOTES

NEW SOUTH WALES

NOMINATIONS FOR NEW COUNCIL, 1972

Article 6: "Nomination of a candidate for election to the Council must be received by the Secretary in writing not less than 21 days before the Annual General Meeting of the Institute, with an intimation in writing that such candidate is willing to act. Each nomination must be signed by two members proposing the candidate."

A member means a member of the Institute in Grade A, that is, a Full Member of the Institute.

Article 67: "The instrument appointing a proxy shall be in writing under the hand of the appointer and shall be deposited at the Registered Office of the Institute not later than 21 hours before the time appointed for the Meeting at which the person named in such instrument proposed to vote in respect thereof."

The "Registered Office" of the N.S.W. Division is located at 14 Atchison Street, Crown's Nest, N.S.W., 2065, and NOT Box 1734, G.P.O., Sydney, N.S.W., 3001.

NOMINATION FORM—COUNCIL ELECTION MARCH 1972

We, the undersigned, being Full Members of the W.I.A., N.S.W. Division, do hereby nominate

for election as a Councillor of the N.S.W. Division for the year 1972/73.

Signed (1) Usual Signature.
Signed (2) Usual Signature.

I am willing to act as Councillor of the W.I.A., N.S.W. Division, if elected by members to do so.

(Signature) Date
This form must be received by the Secretary not later than 3rd March, 1972.

FORM OF PROXY

Date.....

I, a member of the Institute, hereby appoint Mr. as my proxy and in my name do all things which I myself being present would do at the meeting of the Institute to be held at
(Signature) Witness

ELECTION OF COUNCIL

Your earnest consideration is requested for this important election. The election of your official representatives on Council. Past years have shown a lack of interest, and it would be a note of confidence in the future if we had an active and virile election. This of course would provide an active and virile Council. Let 1972 be a year to remember.

VK2 DIVISION

- Mar. 3: Closing date, nominations for the Council.
- Mar. 10: Friday, Annual General Meeting, 7.45 p.m. at 14 Atchison St., Crown's Nest.
- Mar. 25: Saturday, Dinner at Artarmon Bowling Club, \$5 per double.
- Mar. 26: Sunday, Convention/Field Day.

VK2 DIVISION, W.I.A.

ANNUAL DINNER

to be held at

ARTARMON BOWLING CLUB

Burra Road, Artarmon

on

SATURDAY, 25th MARCH, '72

at 7.30 for 8.00 p.m.

Tickets: \$5.00 Double

are available from the Admin. Secretary.

Dress: Black tie.

The next monthly general meeting of the VK2 Division will be held on Friday, 23rd February, 1972. The feature is an amateur lecture supplied by the V.H.F. and T.V. Group and the lecturer will be Mr. Jamieson Rowe, VK2ELO, the Editor of Electronics Australia. Mr. Rowe will talk on Antenna Matching and Measurement, topics which will appeal to all members no matter what their particular operating interests may be.

Country members interested in v.h.f. are reminded that the V.H.F. and T.V. Group has now been publishing for some time a newspaper and many technical articles and models. The V.H.F. Newsletter may be collected from the Wireless Institute Centre, free of charge or obtained by post by forwarding a 9 x 4 inch stamped addressed envelope to the Editor, V.H.F. & T.V. Group, Postbox 14 Atchison Street, Crown's Nest, N.S.W., 2065.

Intending Amateurs are advised that a new A.O.C.P. class starts this month at W.L.C. Details of this or the Correspondence Course may be obtained from Course Supervisor, C/o 1 Atchison Street, Crown's Nest, N.S.W., 2065.

South-West Zone—It is to be arranged at Lockhart at 2 p.m. on 27th Feb., to discuss the venue and arrangements for this year's S.W. Zone Convention to be held as usual over the holiday week-end in October. Should you have problems finding your way, Ch. B will be monitored. Further details from Phil VK2YS.

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Support yourself also by saying you saw it in "Amateur Radio"

VICTORIA

The major event in February is the John Moyle Memorial Field Day on 12th and 13th February. Many stations will be in the field in this event. Both individual portable stations and those set up in clubs will be competing. Most Zones and Clubs intend operating and the Victorian Divisional Council will field VK3AWI portable at Point Nepean.

The field day is an excellent opportunity to work from National Parks and it is to be hoped that many stations in this area will activate many National Parks possible. This is one way of generating some interest as many are looking for contacts for the National Parks Award.

Conventions are once more in the news, with the Eastern Zone planning in early March, and the W.I.A. Group organising an Easter Convention at Wandin East, in the heart of the beautiful berry country behind the Dandenongs.

The Eastern and Mountain District Radio Club will be celebrating their station VK3ER for the Lilydale Centenary Celebrations from the 12th to 19th Feb. Visitors are welcome and special QSL cards will be issued.

New A.O.C.P. classes commence on 15th Feb. (theory) and 17th Feb. (Morse) and I would like to thank the Council to wish success to all those attending.

Finally I would like to remind v.h.f. operators that the Ionospheric Prediction Service would like to have details of DX contacts, particularly those made to VK3AWI, VK3ZQC, trans-equatorially. More details may be obtained from the Ionospheric Prediction Service at 162-166 Goulburn St., Darlinghurst, N.S.W., 2011.

Congratulations to Arthur Lock, VK3AUL, of Wodonga, on being awarded the British Empire Medal in the New Year's Honours List for services to the community.

The Eastern Zone publicity officer, George VK3ASV-T, reports that the Intruder Watch Group have been very active; that Norm VK3ZQC of Yallourn has been given permission to test and operate an experimental 2 mz beam (144.225 MHz), initially horizontal halo vertically, and that the VK3AWI portable to VK3WV/R3 has been moved to Mt. Tassie, and the Zone welcomes many new operators recently successful in the exam.

VKS S.W.L. GROUP

As from February 1972, the VK3 S.W.L. Group will hold only one meeting per month, on the last Wednesday in each month. This replaces the Friday meeting, and will commence on Wednesday, 23rd February, 1972.

V.R.C.S. VICTORIA

The Council of the Youth Radio Club Scheme in Victoria is now under the Honorary Patronage of Major-General Sir Rohan Delacombe, K.C.M.G., C.V.C.O., K.B.E., C.B., D.S.O., R.S.J., and Lady Delacombe, C.S.J.

The following persons constitute the Victorian Divisional Council of the Society: President, Mr. J. McLean, VK3ZQD; Supervisor, Dorothy E. McLachlan, Secretary, Keith A. Nicholls, VK3JANI; Treasurer, Jim Linton, Media Publicity Officer; Bob J. Callender, VK3AQ; Projects Officer; Chris Van-Lint, Education Officer.

The I.R.E. Pennant for the best School Club in Victoria was presented on 13/12/71 at the Assembly Hall of St. John's College, Braybrook, to their Radio Club which composed eight members. This is the third time the Pennant has been awarded in Victoria. Many certificates of different levels—mainly in the Honours range—were also distributed to the students.

Many new clubs are being formed for 1972 and anyone requiring further details should write to the State Supervisor, Y.R.C.S., P.O. Box 39, Mooroolbark, Vic., 3138.

RECIPROCAL LICENSING—BELGIUM

"World Radio—Zone 2" of Sept. 9, 1971, reports that since 1966 Belgium has made the unusual gesture of granting licences to all irrespective of officially-negotiated reciprocal licences. Information about visitors' licences is stated to be obtainable from Rene Vannuyse, ON4VV, Diepestreet 52, 1970, Wexembeek-Oppem, Belgium.

EASTERN ZONE, VIC. DIV., W.I.A.

ANNUAL CONVENTION

on

18th and 19th MARCH, 1972

at MOONDARRA G.E.T.H.

Bring your YL or XYL to win some of the prizes

Bookings and more details from E.Z. Sec., P.O. Box 175, Maffra, Vic., 3860.

CENTRAL COAST AMATEUR RADIO CLUB

will hold their 15th Annual

FIELD DAY

at

GOSFORD, N.S.W.

on

SUNDAY, 20th FEB., 1972

PROGRAMME

9.30—Mobile Scramble, in six sections: H.F. 6 mx net, 6 mx tunable, 2 mx net, 2 mx tunable, u.h.f. Log extract to announcing table before 11 a.m.

8.45—10 m Pedestrian Fox Hunt, 62, XYL or YL \$1 children or full-time students 50c.

9.30-10.00—Morning Tea provided.

10.00—Disposals open.

10.00-10.45—40 mx Fox Hunt (for people without 40 mx only).

10.15-10.45—30 mx Pedestrian Fox Hunt (for people without 40 mx only).

10.15-10.45—Ladies Throwing Contest in 2 divisions: Rolling Pins, Radio.

11.15-12.00—2 mx Fox Hunt.

11.15-12.00—Hot Dogs, Hot Making Contest (materials supplied).

12.00-1.30—Lunch provided.

1.30—Quiz closing time.

1.30-1.45—2 mx Pedestrian Fox Hunt.

1.30-1.45—Reptile Park or bus tour our areas.

2.00-2.45—2 mx Fox Hunt.

2.45-3.15—Afternoon Tea provided.

3.10-3.40—6 and 2 mx Net combined Map (100m, 150m, 250m and C.H.B.).

4.00-4.15—2 mx Pedestrian Fox Hunt.

4.15-4.30—Lucky Dips.

4.30-5.00—Prizes.

Other attractions: Local Jam and Cake Stall, 80% soft drinks, lucky door prize (must be in before 9.45 a.m.), children's events, Amateur Television, weaving display and demonstration.

14th JAMBOREE ON THE AIR

In his report, the national organiser, Hon. Commissioner Noel I. Lynch, 15 Noeline St., Dorrington, Qld., 4669 (SWL L40034) covers JOTA held on Oct. 16/17 last. Report of Lists, Scouting and Link Camps in conjunction with JOTA are proving popular and worthwhile. Local work by W.I.A. and Amateurs receives praise, especially in N.S.W. and T.P.G. On the national level, the report of JOTA by the Radio Branch receives special mention and appreciation. The use of local time instead of Z was much favoured.

There was a small decrease in the number of participating Amateur stations partially offset by multi-operator stations on a shift basis. Contacts were up and all helpers and hospitalities were acknowledged.

The next JOTA is Oct. 21/22, 1972. Good luck.



This is a publication in English for the Radio Amateur especially covering v.h.f., u.h.f. and microwaves.

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SILENT KEYS

It is with deep regret that we record the passing of—

VK3NJ—K. Meallin.

VK3ARX—C. Serle.

L30150—A. G. McKrell.

HAMADS

Four lines FREE for members only.

See Jan. 1972 "A.R." page 23 for complete details.

FOR SALE

Frankston, Vic.: HRO-60. The finest communications receiver of the HRO series. S.s.b./a.m./c.w./g.m. cov. 100-3000 kHz. Built-in 100-watt power bands including 10-in. loudspeaker and built-in 110/230v. a.c. p.s. Perfect condition. Cost \$1250, gift \$495. VK3TD. Phone 783-9611 or 787-1407 (a.h.).

Cowell, S.A.: All-band 6236 linear, genuine 400w. output without flat-topping. Professional appearance with p.s.u., passive grid needs little drive. \$100. VK5SB1 OTHR: Cowell Phone 62.

Townsville, Qld.: Vidicon Camera, fully transistorised with F1.9 25 cm Daimler J.V. Lens, new E.M.I. 1-inch Vidicon, printed circuitry and full circuit diagrams, \$175. W. Sebbens, P.O. Box 1105, Townsville, Qld.

Perth, W.A.: Two Heath Bandpass Filters, 8.4 to 8.8 MHz., \$10 pr. VK5TU, OTHR.

Tumurramulla, N.S.W.: "Frontier" Digital 500 Transceiver. Full 100-watt s.s.b. exciter, built-in 500-watt p.s.u. Noise reduction to 1 MHz., vox, p.t.t., 32 integrated circuits, 20-30 plus 2 spare channels. Commercial p.s.u. with in-built speaker, brand new (origins cost \$715 plus \$92 for p.s.u.). My price \$850, will drop to \$710 for F1010, VK3TD, T. Tatton, 38A Holman St., Tumurramulla, N.S.W., 2074. Phone 62-449-3274.

Bulleen, Vic.: Galvanised steel lattice tower, telescope crank-up to 40 feet, in good condition, ready to transport. Phone VK3VGG, 856-1894.

Canberra, A.C.T.: Hallicrafters SR150 Transceiver, 10-80 metres, 150w. p.e.p. s.s.b., crystal calibrator, remote control handset, etc. At external fair. \$350. VK1VB, Vic. Burman, 140 Badimara St., Warananga, A.C.T., Phone Canberra 88-2103.

Frankston, S.A.: HRO Senior Communications Receiver, 100-3000 kHz, 1.7 m. 300-watt power bands and components or p.s.u., \$120. Baluns 10 to 80 m, Heath type B-1, new, \$10 each. VK3TD, Phone 783-9611 or 787-1407 (a.h.).

Townsville, Qld.: Varian, brand new variable Transformer, 2 amp., 240 volt input, 0-380 volt output. Model W5MTN. Bargain at \$40. Write L. Dancey, VK4LY, OTHR.

Cowell, S.A.: Filter s.a.b. 4-band, works well. \$50. Heavy duty p.s.u. to match \$30. AR convertor for modern tubes and prod. det. with h.d. p.s.u. and 15-20 mc converted. \$50. VK5SB1 OTHR (Ph. 62).

Kempsey, N.S.W.: "Centralis" 20A 160-10 mc s.s.b. Exciter, \$60. "Acitron" Mobile P.S. \$80. Type "S" P.S. \$20. "Command" 6.8 MHz. Rcvr., \$10. VK2AAH, Box 137, Kempsey, N.S.W., 2440.

Frankston, Vic.: Power Supply, h.d. com. unit, 12v. d.c. input, 450 mA, 1.7 m. 300-watt power band, \$75. Power Supply, Heath Model HP-10, 12v. d.c. input, 600v, 200 mA, 300v, and -125v output, new, \$35. VK3TD, Phone 783-9611 or 787-1407 (a.h.).

WANTED

Boscombe, Vic.: Three-band Transceiver, Galaxy III, Swan, etc. Price and details to VK3BAO, OTHR (Phone 454364). Cash sale.

Miranda, N.S.W.: Converter, 27 to 28 MHz., output 7 to 9 MHz. VK2TN, I. Ballou, P.O. Box 198, Miranda, N.S.W., 2228. Phone (02) 520-8165.

Sandringham, Vic.: Disposal Crystal(s) for 1835 MHz. and any other freq. on 160 mx. Write with price and freq. VK3SL OTHR.

6 METRE AMATEUR BAND

A rumour has recently been circulating amongst some v.h.f. operators that it is proposed to impose transmitting restrictions in the six metre Amateur band within a specified radius of Channel 6 tv transmitters.

All Amateurs are advised that the Central Office of the Radio Branch of the P.M.G. Department has made no such proposal, does not intend to make such a proposal, and is aware of no such proposal.

There is therefore no basis for the rumour.—Michael Owen, VK3KI, Fed. Pres., W.I.A.

BOOK REVIEW

ELECTRONIC CONSTRUCTION PRACTICES

A very informative book, not only for the beginner but also for the experienced builder. The basic principles of electronics, complete with very clear diagrams and photographs, cover the selection, use and mis-use of tools; equipment planning and layout; metal working including riveting, shielding and some novel methods; Antennas by means of computer lettering; the correct mounting of components; and wiring and testing the completed unit.

The one shortcoming of this book is that it does not include any reference to construction of electronic equipment.

Author: Robert Lewis, WMQY; Publisher: Radio Publications Inc.; availability: Divisional Secretaries or Federal Executive Publications.

VHF PROPAGATION

Ionospheric Prediction Service Division, Commonwealth Bureau of Meteorology, 180-190 Government Street, Darlinghurst, N.S.W., 2000. Editor "A.R." Dear Sir,

The Ionospheric Prediction Service has expanded its interests in v.h.f. propagation and now includes research in the field of amateur Amateurs and SWLs on trans-equatorial propagation, Sporadic-E, and tropospheric propagation in the v.h.f.-u.h.f. spectrum.

To assist interested individuals we have standard report forms and a letter of explanation which may be supplied on application to me at the above address.

Log extracts from the past as well as future observations are welcome.

We would appreciate that Amateurs have made in the past to assist research into propagation and would appreciate any assistance in our current research.

A great deal of enthusiasm has been displayed by N.S.W. and some Interstate Amateurs to assist in this work and we hope that we are anxious to foster this on a national scale. I would be grateful if you could give publicity on our project in "Amateur Radio" magazine or your earliest opportunity.

Next March I.P.S. will commence a short-term warning service operational for trans-equatorial propagation events. I hope to be able to give more details shortly.

—Roger Harrison, VK2ZTB, ex-VK3ZRY
Senior Technical Officer
Low Latitude Section.

[Those interested in this field are requested to write direct to Mr. Roger Harrison.—Ed.]

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★ SW-4A	RECEIVER INTERNATIONAL SHORT WAVE	\$390.00
★ T-4XB	TRANSMITTER SSB	\$650.00
★ W-4	RF IN-LINE WATTMETER 1.8-54 MHZ.	\$65.00
★ WV-4	RF IN-LINE WATTMETER 20-200 MHZ.	\$77.00

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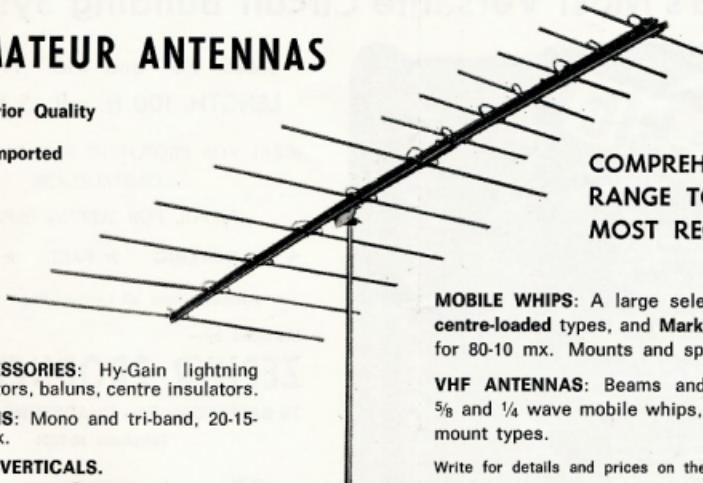
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South Aust. Rep.: FARMERS RADIO PTY. LTD., 257 Angas St., Adelaide, S.A., 5000. Telephone 22-1268
Western Aust. Rep.: H. R. PRIDE, 26 Lockhart Street, Como, W.A., 6152. Telephone 60-4379

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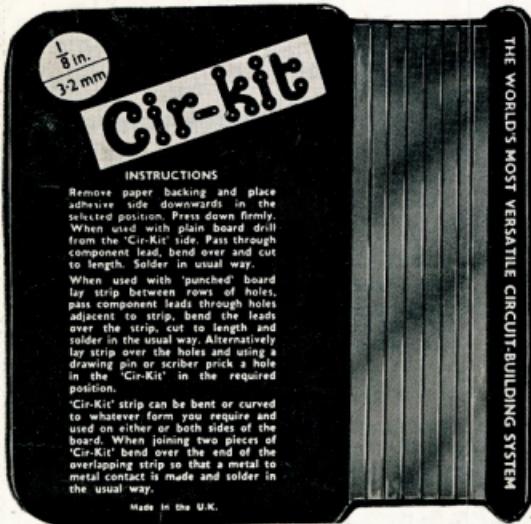
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Insert - February A.R.

STATE OF VICTORIA POWER RESTRICTIONS

February A.R. is late every year because of holidays and, consequently, printery shut down. It is not much later this year than any other.

The outlook for March A.R. at this moment appears gloomy because the printing house for A.R. has been closed — due to power loadings. There is no immediate evidence of the general power restrictions being lifted. At best, therefore, March A.R. — the first to be published by the Federal organisation — may be late.

The situation is under constant review and numerous alternatives are in mind — most are impractical, some are feasible. Any economically-sound ideas which any member might care to make would be most welcome and would be closely examined having regard to changing circumstances as each day passes.

Every endeavour will, of course, be made to get March A.R. printed and distributed by the First of the month. Failing this, any delay will be minimised.

73

Pete B. Dodd

P. B. Dodd
Federal Manager

Office of the Executive,
P.O. Box 67,
East Melbourne, Vic. 3002

9.2.1972

S T O P P R E S S: Items (in expanded form) for March included —

Oscar A-O-B has now been re-scheduled by AMSAT for 1973. A-O-C will be launched about June and will contain only the 2-metre / 10-metre U.S.A. transponder of the three systems originally planned for A-O-B.

Major "Bill" Mitchell, VK3UM, died of a heart attack on 2nd February. There were several other "silent keys" for March A.R.

Federal Convention is at Easter — MARCH 31ST — APRIL 3RD